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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,290	08/19/2003	Chang-Lung Kang	B-5208 621170-6	5796
36716	7590	10/04/2005	EXAMINER	
LADAS & PARRY 5670 WILSHIRE BOULEVARD, SUITE 2100 LOS ANGELES, CA 90036-5679			TRAN, THUY V	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No. 10/644,290	Applicant(s) KANG ET AL.	
	Examiner Thuy V. Tran	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment submitted on 7/20/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 10, 12, 14 and 16-22 is/are rejected.
- 7) ☒ Claim(s) 7, 9, 11, 13 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is a response to the Applicant's amendment submitted on July 20th, 2005. In virtue of this amendment, claim 23 was previously canceled and claims 1-22 remain pending in the instant application.

Drawings Objections

1. Upon reconsideration, the drawings submitted on 08/19/2003 are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "second driving circuit" (claimed in claims 8 and 9) or the "third driving circuit" (claimed in claims 12 and 13) must be shown or the feature(s) canceled from the claim(s).

Applicants are noted that in order to more clearly describe the claimed invention:

- Both the first and second or third driving circuits should be shown in the same figure; and
- The connection of these two driving circuits to other parts/components in the system should be clearly shown in the figure.

No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the

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drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification Objection

2. Upon reconsideration, the specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The second/third driving circuit as recited in claims 8-9 and 12-13 respectively.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 6, 8, 10, 12, 14, and 16-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Crane (U.S. Patent No. 6,150,772).

With respect to claim 1, Crane discloses, in Fig. 2C, a multi-lamp backlight system comprising (1) a core [160], (2) a first coil set (either one on left or right, which is connected to a side of power transistors [156, 158]) wrapped around the core [160] to which a first AC voltage is applied, (3) a second coil set (the one on left or right which is connected to lamps [12]) and a

third coil set (the other which is connected to lamps [12]) wrapped around the core [160] and respectively disposed on first and second sides (left and right) of the first coil set, on which second and third AC voltages are induced (since [160] is a step-up transformer; see col. 8, lines 66-67) by the first AC voltage signal applied to the first coil set respectively, wherein the number of coils in the second and third coil sets are substantially the same (see Fig. 2C), and (4) a first lamp and a second lamp [12 or HCFL] supplied with power by the second and third AC voltages respectively.

With respect to claim 2, Crane discloses that the first and second lamps are discharge lamps (see col. 2, lines 8-10).

With respect to claim 3, Crane discloses that the discharge lamps are CCFL (see col. 2, lines 8-10).

With respect to claim 4, Fig. 2C of Crane shows that each of the second and third coil sets has two ends of, respectively, first and second polarities, and the first lamp and the second lamp [12 or HCFL] are coupled to the ends of the first polarity of the second and third coil sets respectively.

With respect to claim 6, Crane discloses, in Fig. 2C, a first driving circuit [156, 158] for providing the first AC voltage.

With respect to claim 8, Crane discloses, in Fig. 2C, that the system further comprises a second driving circuit [105], and a fifth coil set (a second one from either left or right on the side of [156,158]; see Fig. 2C) wrapped around the core [160], and having a first end coupled to a first end of the first coil set and a second end coupled to the second driving circuit [105].

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With respect to claim 10, Crane discloses, in Fig. 2C, that the first coil set and the fifth coil set are disposed between the second and third coil sets.

With respect to claim 12, Crane discloses, in Fig. 2C, that the system further comprises a third driving circuit [105], a seventh coil set (either in the middle coil sets which is connected to the first coil set) wrapped around the core, and having a first end coupled to the first end of the first coil set and a second end coupled to the third driving circuit [105], and an eight coil set (either one in the middle coil sets which is connected to the second or third coil set) wrapped around the core [160], and having a first end and a second end coupled to the third driving circuit [105] (coupled to transformer [86] of [105]).

With respect to claim 14, Crane discloses, in Fig. 2C, that the first, seventh, and eighth coil sets are disposed between the second and third coil sets.

With respect to claim 16, Crane discloses, in Fig. 2C, that the system further comprises a feedback network [105] coupled between the first lamp and the second lamp [12 or HCFL], and the first driving circuit [156, 158].

With respect to claim 17, Crane discloses, in Fig. 2C, a multi-lamp backlight system comprising (1) a core [160], (2) a first coil set (either one on left or right, which is connected to a side of power transistors [156, 158]) wrapped around the core [160] to which a first AC voltage is applied, (3) a plurality of second coil sets (on the side of lamps) wrapped around the core [160] and symmetrically disposed on first and second sides (left and right) of the first coil set, on which a plurality of second AC voltages are induced (since [160] is a step-up transformer; see col. 8, lines 66-67) by the first voltage signal applied to the first coil set, wherein numbers of

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coils in the second sets are substantially the same (see Fig. 2C), and (4) a plurality of lamps [12 or HCFL] supplied with power by the second AC voltages.

With respect to claim 18, Crane discloses that the lamps are discharge lamps (see col. 2, lines 8-10).

With respect to claim 19, Crane discloses that the discharge lamps are CCFL (see col. 2, lines 8-10).

With respect to claim 20, Fig. 2C of Crane shows that each of the second coil sets has two ends of, respectively, first and second polarities, and the lamps [12 or HCFL] are coupled to the ends of the first polarity of the second coil sets.

With respect to claim 21, Crane discloses, in Fig. 2C, that the system further comprises a driving circuit [156, 158] providing the first AC voltage.

With respect to claim 22, Crane discloses, in Fig. 2C, that the system further comprises a feedback network [105] coupled between the lamps [12 or HCFL] and the driving circuit [156, 158].

5. Claims 1-2, 4-6, 17-18, and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirayama et al. (U.S. Patent No. 4,547,705).

With respect to claim 1, Hirayama et al. discloses, in Fig. 5, a multi-lamp system comprising (1) a core [LT], (2) a first coil set [3] wrapped around the core [LT] to which a first AC voltage is applied, (3) a second coil set [4] and a third coil set [4'] wrapped around the core [LT] and respectively disposed on first and second sides (left and right) of the first coil set [3], on which second and third AC voltages are induced by the first AC voltage signal applied to the first coil set respectively, wherein the number of coils in the second and third coil sets are

substantially the same (see Fig. 5), and (4) a first lamp and a second lamp [F1, F2] supplied with power by the second and third AC voltages respectively.

With respect to claim 2, Hirayama et al. discloses that the first and second lamps are discharge lamps (see col. 1, line 10).

With respect to claim 4, Hirayama et al. discloses that each of the second and third coil sets has two ends of, respectively, first and second polarities, and the first lamp and the second lamp [F1 and F2] are coupled to the ends of the first polarity of the second and third coil sets respectively.

With respect to claim 5, Hirayama et al. discloses, in Fig. 5, that the system further comprises a first capacitor [C] and a second capacitor [C'] coupled between the first lamp and the second coil set, and the second lamp and the third coil set, respectively.

With respect to claim 6, Hirayama et al. discloses, in Fig. 5, a first driving circuit [IV] for providing the first AC voltage.

With respect to claim 17, Hirayama et al. discloses, in Fig. 5, a multi-lamp system comprising (1) a core [LT], (2) a first coil set [3] wrapped around the core [LT] to which a first AC voltage is applied, (3) a plurality of second coil sets [4, 4'] wrapped around the core [LT] and symmetrically disposed on first and second sides (left and right) of the first coil set, on which a plurality of second AC voltages are induced by the first voltage signal applied to the first coil set, wherein numbers of coils in the second sets are substantially the same, and (4) a plurality of lamps [F1, F2] supplied with power by the second AC voltages.

With respect to claim 18, Hirayama et al. discloses that the lamps are discharge lamps (see col. 1, line 10).

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With respect to claim 20, Fig. 5 of Hirayama et al. shows that each of the second coil sets has two ends of respectively first and second polarities, and the lamps [F1, F2] are coupled to the ends of the first polarity of the second coil sets.

With respect to claim 21, Hirayama et al. discloses, in Fig. 5, that the system further comprises a driving circuit [IV] providing the first AC voltage.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crane (U.S. Patent No. 6,150,772) in view of Lin et al. (U.S. Patent No. 6,717,372).

With respect to claim 5, Crane discloses all of the claimed subject matter, as expressly recited in claim 1, except for a first capacitor and a second capacitor being coupled between the first lamp and the second coil set, and the second lamp and the third coil set, respectively.

Lin et al. discloses, in Fig. 2, a multi-lamp backlight system comprising a first capacitor [C1] and a second capacitor [C2] being coupled between a first lamp [Lp1] and a second coil set, and a second lamp [Lp2] and a third coil set, respectively.

It would have been obvious to one of ordinary skills in the art at the time of the invention to modify the multi-lamp backlight system of Crane by additionally configuring a first capacitor and a second capacitor between the first lamp and the second coil set, and the second lamp and the third coil set, respectively, to limit current flowing through the lamps since such an

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arrangement of the capacitors for the stated purpose has been well known in the art as evidenced by the teachings of Lin et al. (see Abstract, lines 7-8).

Allowable Subject Matter

8. Claims 7, 9, 11, 13, and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or fairly suggest:

- A multi-backlight system further comprising a plurality of fourth coil sets and a plurality of third lamps, wherein numbers of coils of the fourth coil sets are substantially the same, the fourth coil sets are symmetrically disposed on first and second sides of the first coil set, the first AC voltage applied to the first coil set induces a fourth AC voltage on each of the fourth coil sets and the third lamps are supplied with power by the fourth AC voltages, in combination with the remaining claimed limitations as called for in claim 7;
- A multi-backlight system wherein the second driving circuit comprises a first transistor having a source, a gate, and a drain, wherein the drain of the first transistor is coupled to a second end of the first coil set and the gate of the first transistor is coupled to receive a fifth AC voltage; a second transistor having a source, a gate, and a drain, wherein the drain of the second transistor is coupled to the second end of the fifth coil set, the gate of the second transistor is coupled to receive a sixth AC voltage, and a bulk coupled to ground; a first diode and a second diode respectively coupled

- between the source and the drain of the first transistor, and the source and the drain of the second transistor; and a capacitor coupled between a bulk of the first transistor and the first end of the first coil set, in combination with the remaining claimed limitations as called for in claim 9;
- A multi-backlight system further comprising a plurality of sixth coil sets and a plurality of fourth lamps, wherein numbers of coils of the sixth coil sets are substantially the same, the sixth coil sets are symmetrically disposed on first and second sides of the first and fifth coil sets so that the first and fifth coil sets are disposed between the sixth coil sets, the first AC voltage applied to the first coil set induces a seventh AC voltage on each of the sixth coil sets, and the fourth lamps are supplied with power by the seventh AC voltages, in combination with the remaining claimed limitations as called for in claim 11;
 - A multi-backlight system wherein the third driving circuit comprises an inductor having a first end coupled to receive the first AC voltage and a second end coupled to the first end of the first coil set; a first transistor having a drain coupled to a second end of the first coil set, a source coupled to ground, and a gate coupled to a first end of the eighth coil set; a second transistor having a drain coupled to a second end of the seventh coil set, a source coupled to ground and a gate coupled to a second end of the eighth coil set; and a first and second resistor respectively coupled between the gate of the first transistor and the first end of the first coil set, and the gate of the second transistor and the first end of the first coil set, in combination with the remaining claimed limitations as called for in claim 13; and

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- A multi-backlight system further comprising a plurality of ninth coil sets and a plurality of fifth lamps, wherein numbers of coils of the ninth coil sets are substantially the same, the ninth coil sets are symmetrically disposed on first and second sides of the first, seventh, and eighth coil sets so that the first, seventh, and eighth coil sets are disposed between the ninth coil sets, the first AC voltage applied to the first coil set induces an eighth AC voltage on each of the ninth coil sets and the fifth lamps are supplied with power by the eighth AC voltages, in combination with the remaining claimed limitations as called for in claim 15.

Citation of relevant prior art

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prior art Chou et al. (U.S. Patent No. 6,104,146) discloses a multi-lamp driving system.

Remarks and conclusion

11. Applicant's arguments filed 07/20/2005 have been fully considered but they are not persuasive.

With respect to Applicants' arguments on claims 1, 17 and their dependent claims at pages 8 and 9, the Examiner respectfully disagrees with the Applicants' statement in that "Crane does not teach, disclose or suggest a second coil set and third coil set wrapped around the core and respectively disposed on first and second sides of the first coils set". As clearly addressed in the section "Claim Rejections-35 USC § 102" set forth in this Office Action, this limitation is fully disclosed in the teachings of Crane (see "Claim Rejections-35 USC § 102" set forth in this

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Office Action for details). Therefore, claims 1-6, 8, 10, 12, 14, and 16-22 remain rejected as being anticipated by Crane. Also, in that regard, the obviousness rejection of claim 5 still holds.

12. Applicants are noted that upon a careful review of the teachings of the cited prior art to Crane, the indicated allowability of claims 8 and 12 and their dependent claims in the previous Office Action mailed 04/19/2005 is hereby withdrawn (see "Claim Rejections-35 USC § 102" set forth in this Office Action for details).

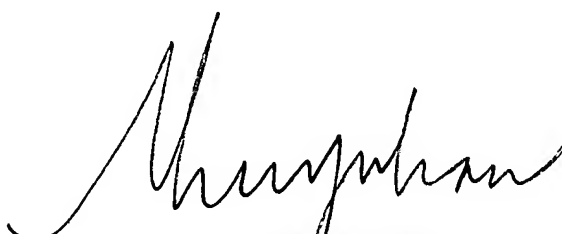
Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy V. Tran whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:00 AM -5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

10/02/2005



THUY V. TRAN
PRIMARY EXAMINER